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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,892	12/30/2003	Yatao Hu	PQC-326US	7428
23122	7590	05/31/2006	EXAMINER	
RATNERPRESTIA			WEIER, ANTHONY J	
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VALLEY FORGE, PA 19482-0980			ART UNIT	PAPER NUMBER
			1761	
DATE MAILED: 05/31/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/748,892	Applicant(s) HU ET AL.	
	Examiner Anthony Weier	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-26 and 31-56 is/are pending in the application.
 4a) Of the above claim(s) 37 and 45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-26, 31-36, 38-44 and 46-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group A (claims 23-26, 31-36, 38-44, and 46-56 including generic claims) in the reply filed on 3/15/06 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 23-26, 31-36, 38-44, and 46-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 23, it is indefinite as to what the "metal component" amount or the "at least one alkali metal" amount is based on. It appears to be per gram of the silica xerogel, but this is not entirely clear from the claim as presently recited. The same indefinite issue is found as well in claim 25 regarding the amount of "at least one alkaline earth metal".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 23, 31-33, 35, 36, 52-54, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 1279250 (now "GB 250").

GB 250 discloses a process wherein beer is treated to reduce haze wherein composition comprising a silica xerogel is added to beer, said silica xerogel having been acid set by the addition of acid and having a pH as called for in the instant claims wherein said silica xerogel also includes sodium (e.g. 8.5; see Table 1; page 4). Due to the indefinite relation of the metal components amounts (see 112 rejection above), it is not completely clear whether or not GB 250 falls within the intended amount range. Nevertheless, it is asserted that the amount of metal component and alkali metal of GB 250 is within the range intended as both the GB 250 and the instant invention achieve the same particular action (i.e. the removal of undesirable material from a beer product). It should be further noted that GB 250 discloses the use of, for example, 0.5 g of silica xerogel per liter of beer wherein the 0.5 g is roughly 500 ppm of beer (Table 5). In addition GB 250 separates the silica xerogel from the beer by allowing same to settle and removing the beer (e.g. page 4).

6. Claims 23-26, 31-36, 38, 40-44, and 47-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al.

Tanaka et al discloses a process wherein beer is treated to reduce haze wherein composition comprising a silica xerogel is added to beer, said silica xerogel having been acid set (by addition of acid; hydrochloric acid, col. 5) and having a pH as called for in the instant claims (e.g. 9.1; see Table 2, Sample H-7) wherein Tanaka et al also discloses an embodiment wherein said silica xerogel comprises both alkali metal (e.g.

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sodium, potassium) and alkaline earth metal (e.g. calcium; e.g. paragraph bridging cols. 2 and 3; col. 7, lines 19-28). Due to the indefinite relation of the metal components amounts (see 112 rejection above), it is not completely clear whether or not Tanaka et al falls within the intended amount range. Nevertheless, it is asserted that the amount of metal component and alkali metal of Tanaka et al is within the range intended as both the Tanaka et al and the instant invention achieve the same particular action (i.e. the removal of undesirable material from a beer product). It should be further noted that Tanaka et al also hydrothermally treats the silica xerogel to adjust the specific surface area and porous volume of the gel (e.g. col. 6, lines 60-64).

7. Claims 23-26, 31-36, 40-44, 49-54, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Berg et al or WO 00/66705 (now "WO 705").

Berg et al and WO 705 disclose a process wherein beer is treated to reduce haze wherein composition comprising a silica xerogel is added to beer, said silica xerogel having been acid set by the addition of acid and having a pH as called for in the instant claims wherein said silica xerogel also includes sodium or potassium as well as calcium (Berg et al: e.g. pH 8.5 and 9.5; see col. 3, line 5; col. 2, lines 33-56; Examples 1 and 3; WO 705: e.g. pages 4 and 5; pH 8.5 and 9.5, pages 9 and 10). Due to the indefinite relation of the metal components amounts (see 112 rejection above), it is not completely clear whether or not Berg et al or WO 705 fall within the intended amount range. Nevertheless, it is asserted that the amount of metal component and alkali metal in either one of Berg et al or WO 705 is within the range intended as both Berg et al or WO 705 and the instant invention achieve the same particular action (i.e. the removal of

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undesirable material from a beer product). It should be further noted that Berg et al and WO 705 disclose the use of, for example, 400 ppm of beer (Berg et al, e.g. Example 3; WO 705, e.g. page 11). In addition, Berg et al and WO 705 each separate the silica xerogel from the beer after treatment (Berg et al, e.g. claim 12; WO 705, e.g. page 11).

8. Claims 39, 47, 48, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 705.

WO 705 has been discussed above and further discloses the use of certain additives as called for in instant claims 55 (page 11, e.g. antioxidants) and hydrothermal treatment of said silica xerogel (e.g. page 10).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 23, 31-33, 35, 36, 52-54, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 250.

If it is shown that the particular amount of metal component and alkali metal employed in GB 250 would not fall within the claimed range, such determination would have been well within the purview of a skilled artisan, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at such amount as a matter preference regarding the degree of haze removal desired and to have achieved same through routine experimental optimization.

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11. Claims 23-26, 31-36, 38, 40-44, and 47-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al.

If it is shown that the particular amount of metal component and alkali metal employed in Tanaka et al would not fall within the claimed range, such determination would have been well within the purview of a skilled artisan, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at such amount as a matter preference regarding the degree of haze removal desired and to have achieved same through routine experimental optimization.

Tanaka et al further discloses the use of 50 to 1000 silica xerogel ppm beer but is silent regarding values there within as called for in the instant claims. However, absent a showing of unexpected results, it would have been further obvious to have arrived at the values as set forth in the instant claims as a matter of preference within the range disclosed in Tanaka et al.

Although Tanaka et al is silent regarding the removal of the silica xerogel from the beer after treatment, it would appear that this was intended as this is the conventional treatment of such haze preventing agents (see col. 1, lines 60-64). It would have been further obvious to have removed said silica xerogel after treatment as a conventional step well known in the prior art.

The claims further call for the addition of another additive when contacting the beer. Although Tanaka et al is silent regarding the use of same with the invention disclosed therein, Tanaka et al refers to such haze preventing agents as polyvinylpyrrolidone as known in the prior art. Absent a showing of unexpected results

regarding the use of same in conjunction with the silica xerogel of the instant invention, it would have been further obvious to have added said other haze preventing agents to the beer as simply a double treatment in removing haze or as a combined treatment to effect the same result. It is prima facie obvious to combine two compositions each of which is taught for the same purpose to form a third composition for the same purpose. See *In re Kerkhoven*, 205 USPQ 1069.

12. Claims 23-26, 31-36, 40-44, 49-54, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berg et al or WO 705.

If it is shown that the particular amount of metal component and alkali metal employed in Berg et al or WO 705 would not fall within the claimed range, such determination would have been well within the purview of a skilled artisan, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at such amount as a matter preference regarding the degree of haze removal desired and to have achieved same through routine experimental optimization.

13. Claims 39, 47, 48, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 705.

If it is shown that the particular amount of metal component and alkali metal employed in WO 705 would not fall within the claimed range, such determination would have been well within the purview of a skilled artisan, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at such amount as a matter preference regarding the degree of haze removal desired and to have achieved same through routine experimental optimization.

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14. Claims 23, 31-36, 39, and 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al (U.S. Patent No. 6,444,151).

Hu et al discloses a process wherein beer is treated to reduce haze wherein composition comprising a silica xerogel is added to beer, said silica xerogel having been acid set, hydrothermally treated and having an alkaline pH as called for in the instant claims wherein said silica xerogel also includes sodium or potassium (e.g. col. 2, lines 61-63; col. 3, line 2; col. 5, lines 13-25). Due to the indefinite relation of the metal components amounts (see 112 rejection above), it is not completely clear whether or not Hu et al falls within the intended amount range. Nevertheless, it is asserted that the amount of metal component and alkali metal of Hu et al is within the range intended as both the Hu et al and the instant invention achieve the same particular action (i.e. the removal of undesirable material from a beer product). It should be further noted that Hu et al discloses the use of, for example, 400 ppm of beer (e.g. col. 4, line 61). In addition Hu et al discloses the addition of additives as called for in the instant claims (e.g. foam stabilizers) and separates the silica xerogel from the beer after treatment (e.g. col. 5, line 63 – col. 6, line 12).

It should be noted that although Hu et al discloses the silica xerogel having a pH that is alkaline, particular pH values therein are not provided. However, absent a showing of unexpected results, it would have been further obvious to have arrived at the alkaline pH values as called for in the instant claims as a matter of preference.

If it is shown that the particular amount of metal component and alkali metal employed in Hu et al would not fall within the claimed range, such determination would

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have been well within the purview of a skilled artisan, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at such amount as a matter preference regarding the degree of haze removal desired and to have achieved same through routine experimental optimization.

15. Claims 24-26, 40-44, and 47-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al taken together with Berg et al, WO 705, or Tanaka et al.

Although Hu et al further discloses the use of alkali or alkaline earth metal in the formation of the silica xerogel, it does not set forth their use together. However, Berg et al discloses certain advantages to also including alkaline earth metals in conjunction with the gel (e.g. col. 2, lines 33-47). Tanaka et al teaches advantages of employing same as well (e.g. col. 7, lines 19-28). WO 705 also teaches the usefulness of using alkaline earth metals in conjunction with said gel (e.g. page 5). It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed same for the advantages set forth in Berg et al, WO 705, and Tanaka et al.

As for the amounts of alkaline earth metal to be employed, such determination would have been well within the purview of a skilled artisan, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have arrived at such amount as a matter preference regarding the degree of haze removal desired and to have achieved same through routine experimental optimization.

16. Claims 38 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of GB 250, Hu et al, Berg et al, WO 705, and Tanaka et al and further taken together with Armstead et al.

The claims further call for the calcination of the xerogel. Although WO 705, Berg et al, GB 250, and Tanaka et al are silent regarding same, it is well known to treat such gels to calcination in order to improve the properties of clarification and haze reduction in their use in beers (see Abstract). It would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated such step into the processes of any one of Berg et al, WO 705, GB 250 or Tanaka et al to impart such improvement.

17. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 250 or Berg et al taken together with Tanaka et al, WO 705, or Hu et al.

The claims further call for the addition of another additive when contacting the beer. However, Tanaka et al refers to such haze preventing agents as polyvinylpyrrolidone as known in the prior art. Hu et al teaches the use of known additives like foam stabilizers, antioxidants, perlite, and diatomaceous earth in conjunction with silica xerogel to provide additional absorption or to provide other functions. WO 705 teaches the use of such additives as set forth in claim 55 including antioxidants (page 11). Absent a showing of unexpected results regarding the use of same in conjunction with the silica xerogel of the instant invention, it would have been further obvious to have added said other haze preventing agents to the beer as simply a double treatment in removing haze or as a combined treatment to effect the same result. It is prima facie obvious to combine two compositions each of which is taught for the same purpose to form a third composition for the same purpose. See *In re Kerkhoven*, 205 USPQ 1069.

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18. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over either one of GB 205 or Hu et al taken together with WO 705.

Claim 39 further calls for said xerogel to be hydrothermally treated. However, such treatment is well known to effect a certain pore diameter wherein the amount of haze-causing components are adsorbed without being so large as to take in foam-stabilizing proteins (e.g. page 10). It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed such step in the process of GB 205 or Hu et al so as to better maximize the gel adsorbing effectiveness.

19. Claims 39, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berg et al taken together with WO 705.

Said claims further call for said xerogel to be hydrothermally treated. However, such treatment is well known to effect a certain pore diameter wherein the amount of haze-causing components are adsorbed without being so large as to take in foam-stabilizing proteins (e.g. page 10). It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed such step in the process of Berg et al so as to better maximize the gel adsorbing effectiveness.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

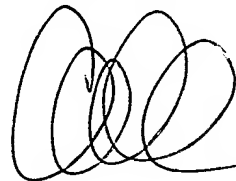
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Weier whose telephone number is 571-272-1409. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Weier
May 23, 2006

Anthony Weier
Primary Examiner
Art Unit 1761



5/23/06